Paper No. 18

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TOSHIKI YAMAMURA and MAKOTO KUWAMOTO

Appeal No. 1999-2003
Application No. 08/751,545

ON BRIEF

Before FLEMING, RUGGIERO, and GROSS, Administrative Patent Judges.
GROSS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1 through 9, 21, and 24 through 26. Claims 10 through 20, 22, 23 have been withdrawn from consideration.

Appellants' invention relates to a flexible mounting mechanism for a storage medium such as a removable hard disk drive. Claim 1 is illustrative of the claimed invention, and it reads as follows:

1. An apparatus having a flexible mounting mechanism, comprising:

a storage medium;

a casing accommodating and holding the storage medium;

a protective housing accommodating and protecting the casing;

a supporting member provided between the casing and the protective housing for supporting the casing; and

a maintaining member supporting the protective housing,

wherein the supporting member and the maintaining member have different vibration damping characteristics.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Gatti et al. (Gatti)	4,713,714	Dec. 15, 1987
Hishinuma et al. (Hishinuma)	4,812,932	Mar. 14, 1989
Brissier et al. (Brissier)	4,815,605	Mar. 28, 1989
Schmitz	5,235,482	Aug. 10, 1993
Koyanagi et al. (Koyanagi)	5,491,608	Feb. 13, 1996

Claims 1 through 3, 5, 6, 8, 9, 21, and 24 through 26 stand rejected under 35 U.S.C. § 103 as being unpatentable over Gatti, Koyanagi, and Hishinuma.

Claim 4 stands rejected under 35 U.S.C. § 103 as being unpatentable over Gatti, Koyanagi, Hishinuma, and Brissier.

Claim 7 stands rejected under 35 U.S.C. § 103 as being unpatentable over Gatti, Koyanagi, Hishinuma, and Schmitz.

Reference is made to Final Rejection (Paper No. 10, mailed March 18, 1998) and the Examiner's Answer (Paper No. 15, mailed January 19, 1999) for the examiner's complete reasoning in support of the rejections, and to appellants' Brief (Paper No. 14, filed October 19, 1998) and Reply Brief (Paper No. 16, filed March 19, 1999) for appellants' arguments thereagainst.

OPINION

As a preliminary matter, we note that appellants indicate on page 3 of the Brief that the claims do not all stand or fall together. In particular, appellants state that claims 4, 7, and 24 each stand or fall alone, but the remaining claims stand or fall together. We agree. Accordingly, we will treat claims 1 through 3, 5, 6, 8, 9, 21, 25, and 26 as a single group with claim 1 as representative, and each of claims 4, 7, and 24 individually.

We have carefully considered the claims, the applied prior art references, and the respective positions articulated by appellants and the examiner. As a consequence of our review, we will affirm the obviousness rejection of claims 1 through 3, 5, 6, 8, 9, 21, 25, and 26 and reverse the obviousness rejection of claims 4, 7, and 24.

Representative claim 1 requires, in pertinent part, a supporting member between the casing and the protective housing and a maintaining member supporting the protective housing, wherein the supporting member and the maintaining member have different vibration damping characteristics. The examiner (Final Rejection, page 2) cites Gatti as teaching maintaining members, Koyanagi as teaching supporting members, and Hishinuma as teaching different vibration damping characteristics. The

examiner combines Gatti, Koyanagi, and Hishinuma to protect the hard disk drive from both vibration and shock.

Appellants argue (Brief, pages 4-5, and Reply Brief, pages 1-2) that the references provide no motivation for the combination. Specifically, appellants state that neither Gatti nor Koyanagi teach or suggest different vibration characteristics for the supporting members and the maintaining members to optimize absorption of different types of external forces. Further, appellants assert that neither Gatti nor Koyanagi distinguishes between different types of external forces and, therefore, there's no motivation to combine the elements from the two references.

We disagree with appellants' assessment of the references. Gatti discloses (column 1, lines 17-19) that magnetic and optical disk drives "are prone to generating errors when they are subjected to mechanical vibration and/or mechanical shocks when in operation." Gatti solves the problem with rubber or plastic compressible vibration isolators. Koyanagi, on the other hand, states (column 1, lines 36-40) that a fixed magnetic hard disk storage apparatus "could not be freely exchanged and carried around until recently, because it is relatively large-sized and has a mechanical structure of high precision which is very vulnerable to shock." Koyanagi solves the problem of external

shock from carrying both during non-operation and during operation (see column 5, lines 44-48) by using shock absorbers made of elastic materials (see column 4, lines 47-50). Thus, Gatti and Koyanagi do distinguish between types of external force, and they use different types of materials to accomplish the different types of shock absorption. Accordingly, the skilled artisan would have found it obvious to use both types of members to absorb the different types of external force.

In addition, although we agree that Gatti and Koyanagi do not state that the vibration characteristics of the two types of members should be different, we do not agree that the examiner has provided no motivation in the references to make the vibration characteristics different. Specifically, Gatti and Koyanagi use different types of materials for their members. As such, the vibration characteristics are likely to be different with no further teachings. Nonetheless, since it is not clear from the two references, the examiner turns to Hishinuma for an explicit teaching. Hishinuma discloses a unitary shock absorber with different spring constants for different portions for different types of external forces. In particular, Hishinuma discloses (column 7, lines 33-45) a portion with a very small spring constant for "allowing the movement in the impact direction without a significant resistance or constraint even in

the occurrence of a small displacement δ of the HDA 9" and a portion with a large spring constant for "buffering an absorbing the impact caused by external disturbances." Even though Hishinuma discloses a single member with different portions to accomplish the different types of shock absorption, it would have been obvious to the skilled artisan that using different spring constants would apply to the separate members of Gatti and Koyanagi as well. The level of the skilled artisan should not be underestimated. ***See In re Sovish***, 769 F.2d 738, 743, 226 USPQ 771, 774 (Fed. Cir. 1985).

Appellants further argue that Hishinuma teaches (Brief, pages 6-7) a single member and fails to teach both a maintaining member and a supporting member. Appellants also assert that because Hishinuma discloses a single member for both types of external forces, Hishinuma teaches away from the combination. We disagree. As explained *supra*, the skilled artisan would have found Hishinuma's disclosure of multiple spring constants to deal with different types of force to apply to the separate elements disclosed by Gatti and Koyanagi as well as to Hishinuma's unitary element. The teachings found in Hishinuma are not limited to the specific embodiment disclosed therein. Thus, we find unpersuasive appellants' arguments for representative claim 1 and

the claims grouped therewith. Therefore, we will sustain the rejection of claims 1 through 3, 5, 6, 8, 9, 21, 25, and 26.

Regarding claim 24, we agree with appellants that the rejection fails. The examiner's assertion (Final Rejection, page 3) that it would have been obvious to use a gel-like supporting member for Koyanagi's members because such were notoriously well-known is insufficient. A factual inquiry whether to modify a reference must be based on objective evidence of record, not merely conclusionary statements of the examiner. ***See In re Lee***, 277 F.2d 1338, 1342-43, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002). Furthermore, conventionality does not suffice as a motivation to use the material. Consequently, we cannot sustain the obviousness rejection of claim 24.

As to the rejection of claim 4 adding Brissier to the combination of references discussed above, we again agree with appellants. In particular, appellants argue (Brief, page 10, and Reply Brief, page 4) that Brissier teaches avoiding breakage of the container, whereas the claim recites using a material for the container that breaks before the disk drive inside is damaged. Brissier states (column 2, lines 40-44) that "the caps make it possible to maintain the integrity of the external enclosure, in such a way that it has an adequate strength to protect the

internal enclosure during the following tests." Further, Brissier shows in Figure 2 that the enclosure is deformed but still in tact after impact. Thus, Brissier appears to be contrary to the limitation recited in claim 4 and, therefore, fails to teach the limitation. Accordingly, we cannot sustain the obviousness rejection of claim 4.

The examiner (Final Rejection, page 4, and Answer, page 7) states that Schmitz's teaching of damping structural resonances equates to claim 7's recitation of reducing the resonant frequency. Appellants argue (Brief, page 11, and Reply Brief, page 5) that Schmitz teaches using a high resonant frequency or addressing the amplitude of the resonance. We agree that Schmitz fails to disclose reducing the resonant frequency. Consequently we cannot sustain the obviousness rejection of claim 7.

CONCLUSION

The decision of the examiner rejecting claims 1 through 9, 21, and 24 through 26 under 35 U.S.C. § 103 is affirmed as to claims 1 through 3, 5, 6, 8, 9, 21, 25, and 26 and reversed as to claims 4, 7, and 24.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED-IN-PART

MICHAEL R. FLEMING Administrative Patent Judge	)
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ANITA PELLMAN GROSS Administrative Patent Judge	)

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